

A new pitviper from Ecuador, *Bothriechis mahnerti* n. sp.

by

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With 2 figures

ABSTRACT

Bothriechis mahnerti n. sp. is described from Cotopaxi and Pichincha provinces in Ecuador. The relationships of this arboreal species are discussed.

INTRODUCTION

Between 1985 and 1990 the Natural History Museum of Geneva (MHNG) received quite a large number of pitvipers from Ecuador. This collecting activity was based on a convention between the Catholic University of Quito and our institution.

According to CAMPBELL & LAMAR (1989) thirteen species of the genera *Bothriechis* (sensu SCHÄTTI *et al.* 1990, i.e. *B. albocarinatus*, *bilineatus smaragdinus*, *punctatus*, *schlegelii*, *taeniatus*), *Bothrops* (*B. atrox*, *brazili*, *lojana*, *m. microphthalmia*, *pulchra*, *xanthogramma*) and *Porthidium* (sensu BURGER 1971, i.e. *hyoprorum*, *nasutum*) are reported up to this day. Based on morphological evidence from Ecuadorian specimens at hand, we consider *Bothrops aspera* (Garman) and *B. atrox* (L.) to be conspecific. However, for the moment being, we include as a nominal species *Bothrops xanthogramma* (Cope), a form which is known only from the type (a ♂ from Chimborazo Province). *Bothriechis alticolus* (Parker) and *B. albocarinatus* (Shreve) are synonyms (SCHÄTTI *et al.* 1990).

Seven specimens from the provinces of Pichincha and Cotopaxi do not fit the description of any known pitviper neither from Ecuador nor the neighbouring areas of Colombia and Peru. Apparently, they represent a yet undescribed species, and we take pleasure in

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dedicating this snake in honour of Dr. Volker Mahnert, director of the Natural History Museum of Geneva, for his enormous efforts to make available for study this unique collection of Ecuadorian snakes.

Bothriechis mahnerti n. sp.

Holotype. MHNG 2459.47, a subadult ♂ from Las Pampas (N Cotopaxi, 0° 26' S × 78° 57' W, about 2000 m), coll. G. Onoré I.1987.

Paratypes. MHNG 2250.21 (♀), Santo Domingo de los Colorados (Pichincha, 0° 15' S × 79° 09' W, ca. 500 m), II.1984; 2459.44-46 and 2459.48 (3♂♂, ♀), Las Pampas, coll. G. Onoré V.1987-X.1988.

Diagnosis. Dorsal scales in 25-27 rows at midbody, 175-188 ventrals, 67-72 paired subcaudals; colour pattern made up of transverse crossbars.

Description of holotype. Head rather elongate; internasals large, in contact anteriorly; a conspicuous *canthus rostralis* formed by the laterally raised internasal and canthal scale; three somewhat enlarged scales along a transverse line between the posterior border of the canthals, and two likewise enlarged scales in front of them which are separated from each other by 1-2 rows of minute granular scales; one (right) or 2 (left) additional scales between the canthal and the large supraocular; seven longitudinal rows of scales between the intersupraoculars; posterior head scales including temporals keeled. Six supralabials (2nd forming lacunolabial); 3 preoculars (uppermost largest, anteriorly reaching the canthal); a very narrow subocular, anteriorly touching the lowermost preocular, posteriorly extending upwards for more than half the diameter of the eye; 2 small postoculars; 3/4 (right/left) scales between subocular and supralabials (2nd on right hand side long and narrow); 9/11 infralabials, and one pair of enlarged chin shields (fig. 1).

Ventrals 187, anal entire, 70 paired subcaudals; 25 longitudinal series of dorsal scales at level of 20th ventral, 25 at midbody and 19 prior to anal scute (at the level of the 182th ventral); reduction from 25 to 23 rows at 106th ventral. Length 312 + 56 mm (head and body + tail). Ground colour yellowish brown (fig. 2); top of head greyish brown, with a "U-shaped" marking running from the posterior median edge of the supraoculars to the occiput, connected posteriorly with a horseshoe-shaped pattern on the nape (median borders edged with black). Postocular stripe with blackish borders; labials light, with darkened borders between the 3rd/4th and 4th/5th supralabials. Scales on underside of head speckled with fine black spots. Body with 16-18 crossbars bordered anteriorly and posteriorly by narrow black edges reaching to the vertebral row, corresponding in position to those on the opposite side, or alternating; distance between crossbars more or less equal to the length of each element (comprising 5-7 longitudinal rows of scales). Lower parts of body brownish grey, lateral margin of ventrals impinged on by lighter dorsal coloration; tail distinct from body, probably orange in live, with some bands towards the tip.

Variation in paratypes. Internasals large and in contact except in 2459.46 (separated by an apical scale), 5-12 intercanthal scales, 6-8 longitudinal rows between supraoculars, 6-8 supralabials (2nd forming lacunolabial), 2-3 preoculars (uppermost in contact with nasal), subocular narrow and elongated, 2 postoculars, 2-4 scales between subocular and supralabials, head scales keeled except on snout, 9-12 lower labials, 175-188 ventrals (♂♂ 175-188, ♀♀ 179-182), anal entire, 67-72 paired subcaudals (♂♂ 67-71, ♀♀ 69-72), 25-27 dorsal scale rows at midbody. The largest specimens (♀, 580 + 105 mm; MHNG 2250.21) has 3 + 15 teeth on the palatinum and

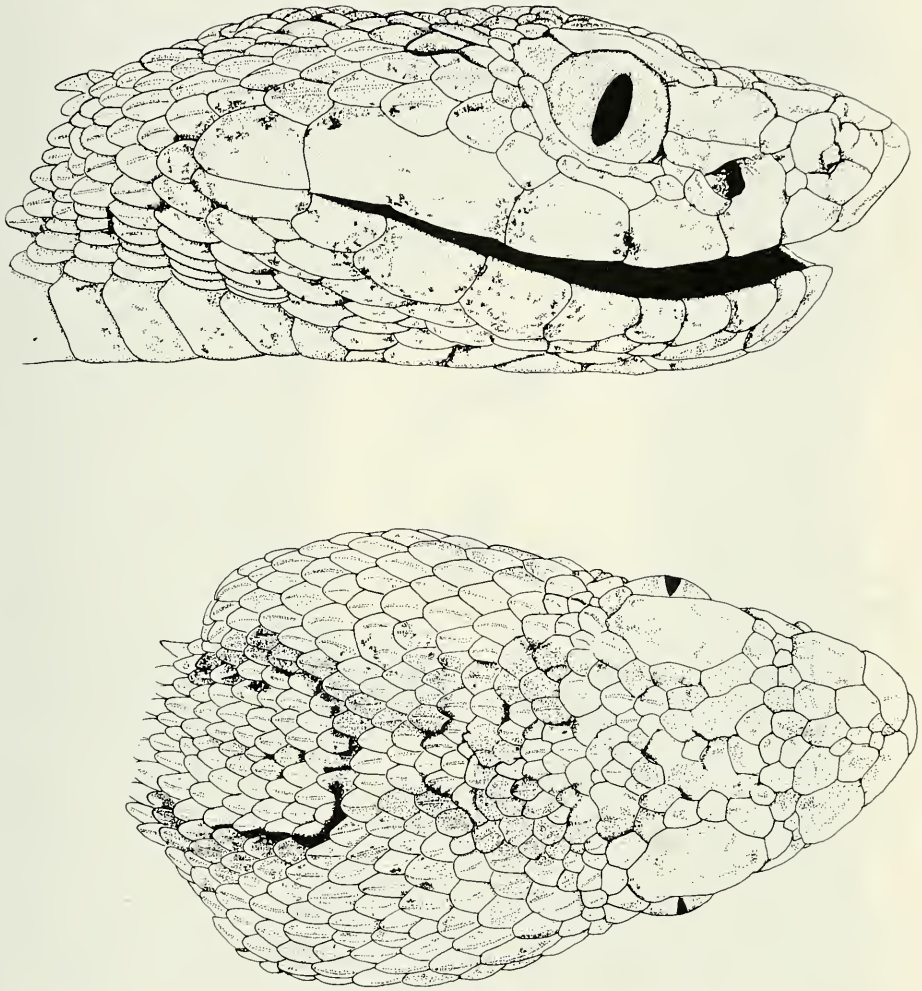


FIG. 1.

Bothriechis mahnerti n. sp.: lateral view of head (holotype MHNG 2459.47). Drawing by C. Charvet.

pterygoid. Juveniles have the tail conspicuously lighter than the body, and the tip bearing a banded pattern; colouration of the dorsum in the adult ♀ (MHNG 2250.21) darker than in the remaining specimens of this series.

Distribution and ecology. This pitviper has been collected in lower montane wet forest from between about 500 m (Santo Domingo area) to near 2000 m (Las Pampas). One of us has seen additional material in a private collection originating probably from southern Cotopaxi. Furthermore, we have a specimen (MHNG 2250.20) said to come from 'Coca' (Napo); we doubt the origin of this snake because we have additional material of other strictly trans-Andean (i.e. Pacific) species from this station in the Amazonian lowlands. Most probably, *B. mahnerti* is restricted to the western versant of the Andes. This new species has a prehensile tail and, therefore, we suppose arboreal habits. However, all the specimens at hand have been taken on the ground near trees. To judge from the large numbers of snakes (including arboreal species) received from Las Pampas and Santo Domingo de los Colorados, we think that this new pitviper is a comparatively rare snake.

DISCUSSION

Apart from *Bothriechis mahnerti*, there are five arboreal species of pitvipers (i.e., forms with prehensile tails) recorded so far from Ecuador: *Bothriechis albocarinatus* (Shreve), *B. bilineatus smaragdinus* (Hoge), *B. punctatus* (García), *B. schlegelii* (Berthold), and *B. taeniatus* (Wagner)¹. Three of them (*albocarinatus*, *b. smaragdinus* and *taeniatus*) live east of the Andes in lower mountain wet forest habitats and rain forest areas. These species can easily be distinguished on the basis of coloration (see SCHÄTTI *et al.* 1990) and scale characters. *B. punctatus* occurs along the Pacific foothills from Panama to NW Ecuador (Esmeraldas, Carchi). This semiarboreal species is similar to *mahnerti* in dorsal scale rows (25-29) but differs in higher ventral and subcaudal counts. A specimen of "*punctatus*" figured by CAMPBELL & LAMAR (1989, fig. 157) does not agree with the original description of this taxon (GARCIA 1896) but resembles the new species in pattern.

Bothriechis schlegelii is the only representative of arboreal pitvipers occurring within the known range of *B. mahnerti*. The eyelash viper (*schlegelii*) is distributed from S Mexico (Chiapas) to westernmost Central Venezuela and Ecuador. Here, it ranges southwards into Manabí province and also occurs in Pichincha (Tandapí, Puerto Quito, Santo Domingo de los Colorados) and Cotopaxi (Galapagos and Las Pampas, MHNG material).

¹ BURGER (1971) separated the arboreal species from the terrestrial genus *Bothrops*. He considered *albocarinatus*, *bilineatus*, *punctatus* and *taeniatus* to belong to *Bothriopsis* Peters, whereas *schlegelii* was grouped with strictly Central American species (*aurifer*, *bicolor*, *lateralis*, *marchi*, *nigroviridis* (type species) and *rowleyi*) under *Bothriechis*. This systematic arrangement has also been adopted by CAMPBELL & LAMAR (1989). In our opinion, the division of the arboreal forms into *Bothriechis* Peters, 1859 and *Bothriopsis* Peters, 1861 is not convincing because of inconsistencies (e.g. the inclusion of the terrestrial *medusa* in *Bothriopsis*) but also because there is not a single character allowing a generic distinction (see SCHÄTTI *et al.* 1990). Contrary to an opinion expressed earlier *Bothriechis* is of masculine gender.

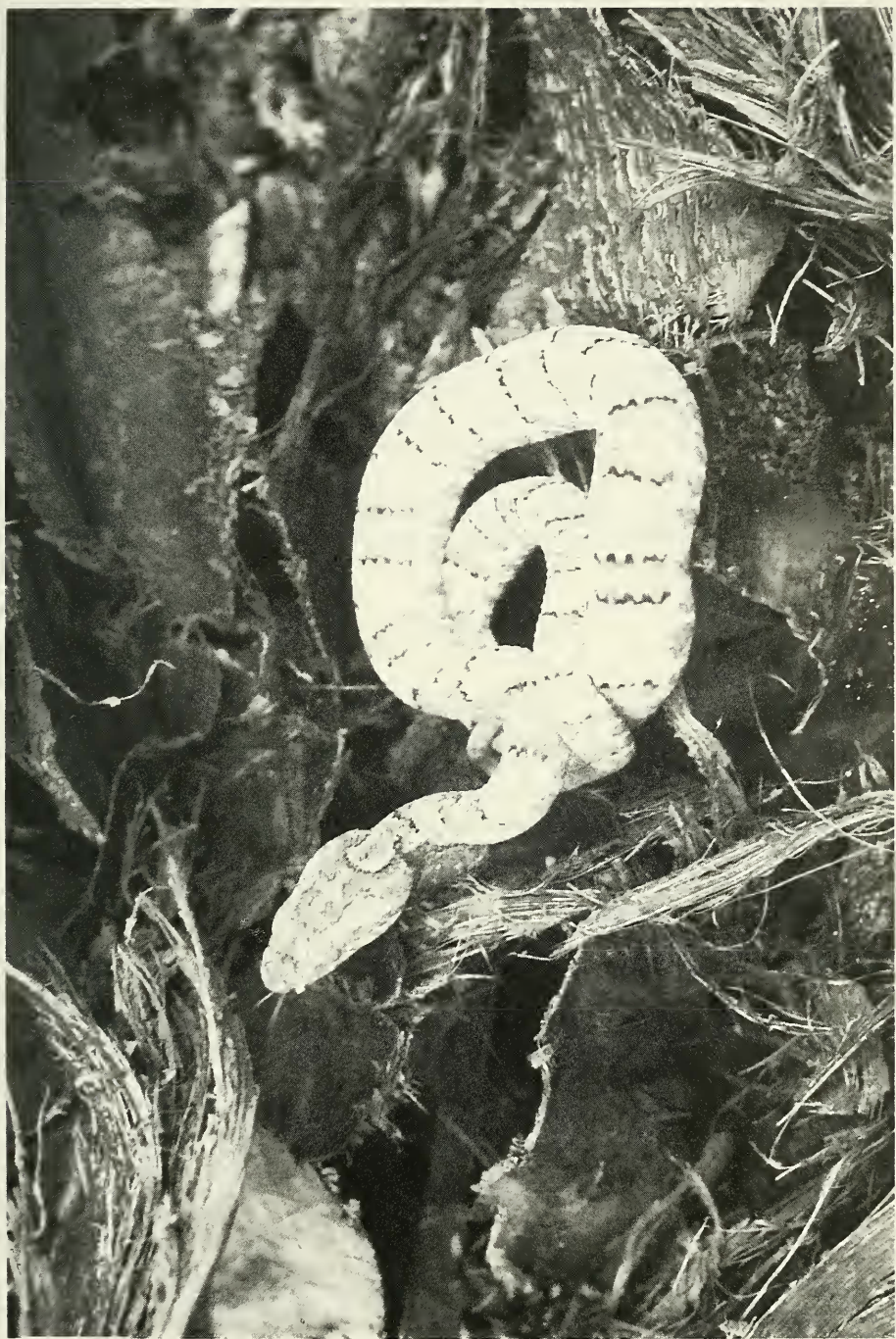


PLANCHE.

Pattern and coloration of the holotype in life. Photo G. Onoré.

Bothriechis schlegelii is characterized by the presence of supraciliary scales, a unique feature among this group of snakes. Ecuadorian *schlegelii* have 133-158 ventrals (♂♂ 135-155, ♀♀ 133-158), and 49-67 mostly undivided subcaudals (54-67 and 49-63, respectively; MHNG material). The eyelash viper has an olive-green to grey-olive coloration; the scales are finely spotted with black, and the two lowermost dorsal rows bear light areas (sometimes confluent, forming a white ventrolateral line). The dorsal pattern normally is made up of a brown, greyish or black broken zig-zag band and paravertebral spots with black margins, but some specimens lack markings on the dorsum. Eyelash vipers from the coastal plain (Manabí) and the Andean foothills (Santo Domingo de los Colorados) have yellow areas between the dorsal markings (e.g., fig. 145 in CAMPBELL & LAMAR 1989).

There is but a single species of arboreal pitvipers from west of the Andes resembling *Bothriechis mahnerti*, i.e. *B. peruvianus* (Boulenger)². However, the latter species is known with certainty only from the Cordillera de Carabaya in S Peru (Puno province). Furthermore, *peruvianus* differs from the new species in body coloration (olive-green), the presence of a black edged yellow streak on either side of the tail as well as in midbody scale rows (23) and higher ventral counts (188-196, fide CAMPBELL & LAMAR 1989).

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² This statement is based on a specimen of *B. peruvianus* without origin showing pronounced dorsal crossbars and figured by CAMPBELL & LAMAR (1989: fig. 155).